Corrections Learning Network

Everyday Math II

Course Materials

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Corrections Learning Network

A division of Educational Service District 101

Success From the Inside Out:
Everyday Math II

In Everyday Math II, just as with Everyday Math, the focus will be on everyday math skills and how they apply to our everyday routine. In this second installment students will again look at some very common everyday activities that require good math skills. From the cost of owning a pet, to winning the lottery or whether to rent or buy a house. In addition, students will learn some very useful everyday math tricks that can greatly simplify, what for many, were intimidating math problems.

Program 1: The Cost of Owning a Pet
Supplemental Activity: Owning a Pet Checklist

Program 2: The Cost of Raising a Child
Supplemental Activity: The Cost of Raising Children

Program 3: Housing (To Buy or to Rent)
Supplemental Material: Renting vs. Buying

Program 4: The Law of Averages
Supplemental Activity: Determining Mean, Median and Mode

Program 5: Winning the Lottery
Supplemental Activity: Probability

Program 6: The Cost of Owning a Car
Supplemental Activity: The Costs of Owning a Car

Program 7: The Cost of Entertainment
Supplemental Material: Entertainment Costs

Program 8: Home Improvement
Supplemental Activity: Home Improvement

Program 9: Common Conversions
Supplemental Activity: Converting Among Standard
Measurements
Program 10: Planning a Trip
Supplemental Activity: Planning Your Vacation Budget

Program 11: Useful Math Tricks

Program 12: More Useful Math Tricks

Everyday Math II
Owning a Pet Checklist

What is the animal's natural habitat?

Can you create a habitat that is similar to the animal's natural habitat?

What does the animal eat? How often does it need to be fed? Can you purchase that type of food?

Does the animal need a friend?

Does the animal have special needs?

Owning a pet is a 24-hour responsibility. Will you get tired of the pet after a few weeks? If so, then pet ownership may not be for you. Some animals can live 5, 10, or 15 years (some even longer). Are you prepared to take care of a pet that long?

Everyday Math II
The Cost of Raising Children

Directions: Use the following information in the tables below to help you determine your monthly costs.

Two-parent Families
• If your combined gross income is less than $38,000, you are in the lower income level.
• If your combined gross income is between $38,000 and $64,000, you are in the middle income level.
• If your combined gross income is more than $64,000, you are in the upper income level.

One-parent Families
• If your gross income is less than $38,000, you are in the lower income level.
• If your gross income is more than $38,000, you are in the upper income level.

Table 1. Monthly Housing Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	**Middle**	**Upper**	**Lower**	**Upper**
0-2	$200	$271	$430	$179	$387
3-5	$198	$268	$428	$204	$411
6-8	$191	$262	$421	$217	$423
9-11	$173	$243	$403	$208	$416
12-14	$193	$263	$423	$208	$416
15-17	$155	$226	$385	$221	$428

Table 2. Monthly Food Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	**Middle**	**Upper**	**Lower**	**Upper**
0-2	$73	$88	$117	$82	$126
3-5	$82	$102	$132	$86	$133
6-8	$105	$129	$159	$108	$160
9-11	$126	$153	$185	$125	$192
12-14	$133	$153	$194	$126	$188
15-17	$143	$171	$204	$137	$199

Table 3. Monthly Transportation Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	**Middle**	**Upper**	**Lower**	**Upper**
0-2	$64	$96	$134	$60	$184
3-5	$63	$94	$133	$53	$177
6-8	$73	$104	$143	$62	$185
9-11	$79	$111	$149	$44	$168
12-14	$89	$121	$159	$51	$175
15-17	$120	$153	$93	$80	$189

Table 4. Monthly Clothing Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	**Middle**	**Upper**	**Lower**	**Upper**
0-2	$32	$37	$48	$28	$40
3-5	$31	$36	$48	$30	$42
6-8	$34	$40	$52	$35	$48
9-11	$38	$44	$57	$36	$49
12-14	$63	$74	$93	$60	$81
15-17	$56	$66	$85	$70	$93

Table 5. Monthly Health Care costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	**Middle**	**Upper**	**Lower**	**Upper**
0-2	$37	$48	$56	$18	$41
3-5	$35	$47	$53	$26	$55
6-8	$41	$53	$61	$31	$63
9-11	$44	$58	$66	$39	$75
12-14	$45	$58	$66	$42	$79
15-17	$48	$61	$70	$41	$78

Table 6. Monthly Child Care and Education Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	Middle	Upper	Lower	Upper
0-2	$67	$109	$165	$42	$103
3-5	$75	$121	$180	$57	$128
6-8	$44	$76	$124	$52	$120
9-11	$27	$51	$86	$25	$70
12-14	$19	$38	$66	$32	$99
15-17	$32	$64	$116	$24	$81

Table 7. Monthly Miscellaneous Costs by Family Type and Income Level

Age of Child	Two-parent			One-parent	
	Lower	Middle	Upper	Lower	Upper
0-2	$51	$79	$133	$31	$128
3-5	$53	$81	$134	$41	$138
6-8	$56	$84	$138	$55	$153
9-11	$58	$87	$140	$44	$142
12-14	$73	$102	$155	$43	$140
15-17	$53	$82	$136	$49	$147

Table 8. Summary for Monthly Costs, Two-parent Family

Expense Category	Age of Oldest Child [ ]	Age of Oldest Child [ ]	Age of Oldest Child [ ]
Housing			
Food			
Transportation			
Clothing			
Health Care			
Child Care & Education			
Miscellaneous			
Monthly Total			

Table 9. Summary for Monthly Costs, One-parent

Expense Category	Age of Oldest Child	Age of Oldest Child	Age of Oldest Child
Housing			
Food			
Transportation			
Clothing			
Health Care			
Child Care & Education			
Miscellaneous			
Monthly Total			

Everyday Math II
Renting vs. Buying

	Renting	**Buying**
Taxes	Sorry, your landlord will reap the tax breaks.	Depending on your situation, your tax savings can be significant.
Equity	You're not getting it. Once that rent money is gone, it's gone.	Paying the principal amount of your mortgage each month is in effect a "forced savings" - over time, you'll accumulate an amount you can borrow from, or convert to cash upon selling.
Investment value	You won't benefit from any increase in the value of the property you rent.	It may go up or down, but given historical trends, you're more likely to gain than loose.
Interest Costs	No worries here.	Depending on your mortgage terms, you'll likely pay huge amount of interest over the life of the mortgage - often much more than the mortgage itself.
Flexibility	If you want out, just move when the lease is up.	If you want out, you need to go through the time consuming and expensive selling process.

Length of stay	If your job requires you to move a lot, or if you're otherwise not ready to commit to one place, renting makes financial sense.	Given the costs of buying and selling, you generally need to keep a home for at least a year in order to avoid losing equity.
Maintenance	It's not generally something you need to worry about.	You need to either do the work, or pay someone else to do it.
Monthly costs	These are fixed	These are variable
Inflation impact	Rents typically rise each year.	Because your payments remain the same for the life of the mortgage (at least for fixed interest loans), you're repaying it with ever cheaper dollars.
Cash up front	An initial deposit is usually required, but is small compared to most mortgage down payments.	Your mortgage down payment and closing costs can be major chunk of change.
Security	You have no guarantees that your landlord will always renew your lease	As long as you pay the mortgage, your housing's secure. Fail to make payments, however, and you'll face the possibility of foreclosure and loss of your house.
Capital gains taxes	You won't realize capital gains, so it's not an issue	Depending on your situation, most or all of the capital gains you realize when you sell your house will be tax-free.

Everyday Math II
Determining Mean, Median and Mode

Directions: Find the mean, median and mode (when appropriate) for each set of data.

Set A	Set B	Set C
14, 18, 12, 18, 14, 25	10,000	4 Hot Dogs
32, 18, 16	10,000	3 Steaks
	10,000	13 Pizzas
	10,000	
	12,000	
	58,000	

Mean_____   Mean_____   Mean_____

Median_____   Median_____   Median_____

Mode_____   Mode_____   Mode_____

Set D

The most trouble-free 1991 car models sold in the USA

Model/Base Price		Problems/100 Cars
1. Lexus LS400	$39,000	47
2. Acura NSX	$61,000	71
3. BMW 750iL	$74,600	74
4. Lexus ES250	$21,500	76
5. Mercedes-Benz S	$63,600	77
6. Infiniti Q45	$40,000	78
7. Pontiac 6000	$12,999	78
8. Toyota Camry	$12,198	79
9. Toyota Cressida	$22,698	80
10. Honda CRX	$ 9,325	89
11. Mercedes-Benz 190E	$28,050	89

Mean_____   Median_____   Mode_____

Everyday Math II
Probability

Probability is the chance of an event happening, If you toss a coin, there are two possibilities. The coin may land showing its head or it may land showing its tail. The probability of an event is written as a fraction.

1. The Greenport Telephone book contains 75000 names. Fifteen Smiths are listed in the phone book. In a random selection from Greenport telephone numbers, what is the probability that the first number selected will belong to a Smith?

2. Liz works as a cashier in a grocery store. At the end of the day she had 12 quarters, 20 dimes, 18 nickels, and 30 pennies. She put all the coins in a bag.
   a. What is the probability that the first coin she takes from the bag will be a dime?
   b. What is the probability that the first coin she takes from the bag will be a penny?
   c. What is the probability that the first coin she takes from the bag will be either a quarter or a nickel?

3. Carlos received a shipment of sweaters to sell in his store. The shipment contained 10 small size sweaters, 15 medium sweaters, and 8 large sweaters. What is the probability that the first sweater he takes from the box will be a medium size?

4. A carton contains 8 cans of tomato sauce and 6 cans of green beans.
   a. What is the probability that the first can taken from the carton will be a can of tomato sauce?
   b. If the first can taken out is tomato and the second is green beans, what is the probability that the next can taken from the box will be green beans?

5. Jose Acevedo, his wife Beatrice, and their son Felipe each bought a ticket for a chance to win a color TV. Altogether 540 tickets were sold.
   a. What is the probability that Jose will win the television?
   b. What is the probability that one of the Acevedos will win the TV set?

Everyday Math II
The Costs of Owning a Car

Directions: Use the information below to help determine your car costs. If you do not own a car have your facilitator or teacher give you some fictitious numbers.

Operating costs per year

gas and oil per mile

total miles driven

total gas and oil

maintenance

tires

other costs

Total operating costs

Ownership costs per year

depreciation

insurance

taxes

license and registration

finance charges

Total ownership costs

Everyday Math II
Entertainment Costs

Every family has the power to dramatically reduce the amount of money that they spend on entertainment. By following a few of the following suggestions, families will have more money to allocate toward basic expenditures.

• Drastically cut your recreation costs by doing activities and games at home. Your family will grow closer.

• Enjoy human and natural environments, rather that depending upon purchased pleasures. Instead of buying expensive tickets to something, take a drive or tour an area that you have not previously visited.

• Take vacations at home. Do something special every day.

• Take advantage of learning opportunities; free trips and community services, school workshops, fairs, libraries, concerts, hikes, public tennis courts, home shows, clubs, and adult-education courses.

• Give up extra TV cable and satellite connections

• Check out books and magazines from the local library instead of buying them. Many libraries also have video tapes, records, cassettes and computers for loan.
• Cancel book, video and music club memberships and magazine subscriptions, especially those which remain unread for a long time.

• Exchange magazines with friends.

• Share a newspaper or get a day-old one from a library or friend.

• Smoking and drinking alcoholic beverages are expensive habits. You may want to reduce or eliminate them.

Everyday Math II
Home Improvement

Tiling a Room: Use the diagram at the bottom of this page to help you answer the following questions.

1. Lila Andrews wants to tile the living room shown at the right. she chooses self-stick vinyl tile that costs $ .80 for each 12" by 12" (1 sq. ft.) tile.

    a) How many tiles does Lila need for the living room?

    b) What is the total cost of this tile?

    c) Lila also considers buying tile at a "close-out" sale for $ .50 per 12" by 12" tile. However, she would have to buy 350 tiles at this price. what would be the cost of these 350 "close-out" tiles?

    d) How many "close-out" tiles would Lila have left over after tiling the living room?

16 ft.

13 ft.
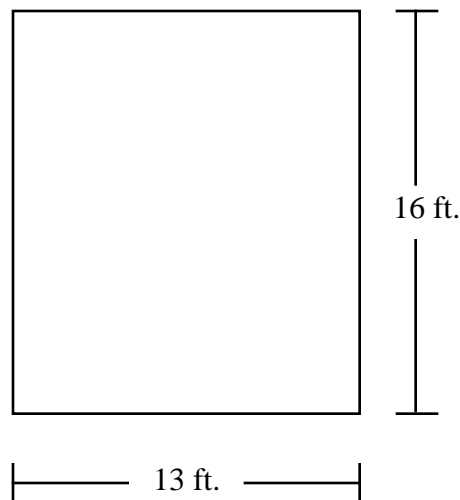
Everyday Math II
Converting Among Standard Measurements

Volume

1 gallon (gal) = 4 quarts (qt)
1 quart   = 2 pints (pt)
1 pint   = 2 cups (c)

Time

1 week   = 7 days
1 day   = 24 hours (hr)
1 hour   = 60 minutes (min)
1 minute = 60 seconds (sec)

Length

1 mile (mi)   = 1,760 yards (yd) or
                5,280 feet (ft)
1 yard   = 3 feet
1 foot   = 12 inches (in)

Weight

1 ton (t)   = 2,000 pounds (lb)
1 pound   = 16 ounces (oz)

Convert the following measurements.

1. How many quarts are in 7 gallons?

2. How many inches are in 4 yards?

3. How many days are in 72 hours?

4. How many pints are in 6 pints?

5. How many yards are in 20 miles?

6. How many inches are in 10 feet?

7. How many ounces are in 3 pounds?

8. How many minutes are in a day?

9. How many pounds are in 16 tons?

10. How many quarts are in 40 gallons?

CLN Televised Courses
Everyday Math II
Rob Rowe, Instructor

Everyday Math II
Planning Your Vacation Budget

Directions: Choose a place you would like to travel to and fill out the table to determine your vacation budget.

Expense Item	Duration	Cost Per Day	Cost Per	Total
Hotels (On the Road)				
Meals (On the Road)				
Accommodations				
Transportation				
Gas				
Tolls				
Rental Car				
Parking				
Meals				
Snacks				
Kennel				
Extra Cash				
Other Expenses				
Overall Total				

*Adjust expense items to reflect your trip. For instance, if you were traveling to Disneyland you might want to buy a weekly pass and so on.

Everyday Math II
Answer Keys

Everyday Math II
Determining Mean, Median and Mode (Key)

Directions: Find the mean, median and mode (when appropriate) for each set of data.

Set A	**Set B**	**Set C**
14, 18, 12, 18, 14, 25	10,000	4 Hot Dogs
32, 18, 16	10,000	3 Steaks
	10,000	13 Pizzas
	10,000	
	12,000	
	58,000	

Mean **18.55**	Mean **18,333**	Mean **6.66**
Median **18**	Median **10,000**	Median **4**
Mode **18**	Mode **10,000**	Mode **no mode**

Set D

The most trouble-free 1991 car models sold in the USA

Model/Base Price		*Problems/100 Cars*
1. Lexus LS400	$39,000	47
2. Acura NSX	$61,000	71
3. BMW 750iL	$74,600	74
4. Lexus ES250	$21,500	76
5. Mercedes-Benz S	$63,600	77
6. Infiniti Q45	$40,000	78
7. Pontiac 6000	$12,999	78
8. Toyota Camry	$12,198	79
9. Toyota Cressida	$22,698	80
10. Honda CRX	$ 9,325	89
11. Mercedes-Benz 190E	$28,050	89

Mean **76.18**   Median **78**   Mode **78, 89**

Everyday Math II
Probability (Key)

Probability is the chance of an event happening, If you toss a coin, there are two possibilities. The coin may land showing its head or it may land showing its tail. The probability of an event is written as a fraction.

1. The Greenport Telephone book contains 75000 names. Fifteen Smiths are listed in the phone book. In a random selection from Greenport telephone numbers, what is the probability that the first number selected will belong to a Smith?   **1/500**

2. Liz works as a cashier in a grocery store. At the end of the day she had 12 quarters, 20 dimes, 18 nickels, and 30 pennies. She put all the coins in a bag.
    a. What is the probability that the first coin she takes from the bag will be a dime?   **1/4**
    b. What is the probability that the first coin she takes from the bag will be a penny?   **3/8**
    c. What is the probability that the first coin she takes from the bag will be either a quarter or a nickel?   **3/8**

3. Carlos received a shipment of sweaters to sell in his store. The shipment contained 10 small size sweaters, 15 medium sweaters, and 8 large sweaters. What is the probability that the first sweater he takes from the box will be a medium size?
       5/11

4. A carton contains 8 cans of tomato sauce and 6 cans of green beans.
    a. What is the probability that the first can taken from the carton will be a can of tomato sauce?   **4/7**
    b. If the first can taken out is tomato and the second is green beans, what is the probability that the next can taken from the box will be green beans?   **5/12**

5. Jose Acevedo, his wife Beatrice, and their son Felipe each bought a ticket for a chance to win a color TV. Altogether 540 tickets were sold.

a. What is the probability that Jose will win the television? **1/540**
b. What is the probability that one of the Acevedos will win the TV set?
         1/180

Everyday Math II
Home Improvement (Key)

Tiling a Room: Use the diagram at the bottom of this page to help you answer the following questions.

1. Lila Andrews wants to tile the living room shown at the right. she chooses self-stick vinyl tile that costs $ .80 for each 12" by 12" (1 sq. ft.) tile.

    a) How many tiles does Lila need for the living room?   **208 tiles**

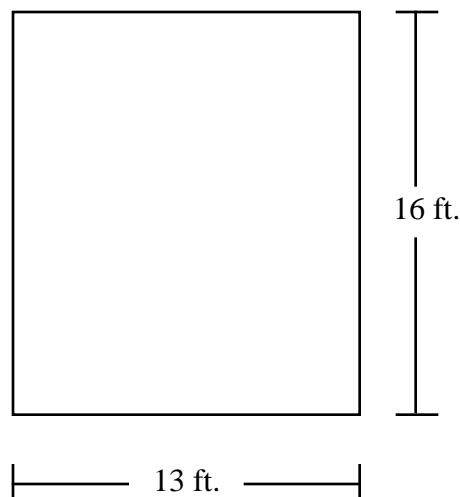   b) What is the total cost of this tile?   **$166.40**

    c) Lila also considers buying tile at a "close-out" sale for $ .50 per 12" by 12" tile. However, she would have to buy 350 tiles at this price. what would be the cost of these 350 "close-out" tiles?   **$175.00**

    d) How many "close-out" tiles would Lila have left over after tiling the living room?   **142**

16 ft.

13 ft.

Everyday Math II
Converting Among Standard Measurements (Key)

Volume

1 gallon (gal) = 4 quarts (qt)
1 quart = 2 pints (pt)
1 pint = 2 cups (c)

Time

1 week = 7 days
1 day = 24 hours (hr)
1 hour = 60 minutes (min)
1 minute = 60 seconds (sec)

Length

1 mile (mi) = 1,760 yards (yd) or
5,280 feet (ft)
1 yard = 3 feet
1 foot = 12 inches (in)

Weight

1 ton (t) = 2,000 pounds (lb)
1 pound = 16 ounces (oz)

Convert the following measurements.

1. How many quarts are in 7 gallons?
    28 quarts

2. How many inches are in 4 yards?
    144 inches

3. How many days are in 72 hours?
    3 days

4. How many pints are in 6 pints?
    12 pints

5. How many yards are in 20 miles?
    35,200 yards

6. How many inches are in 10 feet?
    120 inches

7. How many ounces are in 3 pounds?
    48 ounces

8. How many minutes are in a day?
    1,440 minutes

9. How many pounds are in 16 tons?
    32,000 pounds

10. How many quarts are in
    40 gallons?
    160 quarts